



State of Nevada – Department Of Personnel

CLASS SPECIFICATION

<u>TITLE</u>	<u>GRADE</u>	<u>EEO-4</u>	<u>CODE</u>
COMPUTER SYSTEMS TECHNICIAN IV	31	C	7.935
COMPUTER SYSTEMS TECHNICIAN III	29	F	7.940
COMPUTER SYSTEMS TECHNICIAN II	27	F	7.941
COMPUTER SYSTEMS TECHNICIAN I	25	F	7.957
COMPUTER SYSTEMS TECHNICIAN TRAINEE	23	F	7.943

SERIES CONCEPT

Computer Systems Technicians operate the main computer console, multiple on-line networking systems, auxiliary consoles, and peripheral equipment on an electronic multi-processing variable task information processing system in a production data environment; coordinate multiple on-line telecommunications systems and/or networks by the use of monitoring devices and messages initiated through network commands; schedule, set up and review production jobs for quality control; and act as a liaison with users.

Starts and/or stops system programs and equipment for normal systems maintenance and during emergencies by following established power on/power off procedures; using authorized console, keys directives to initiate system programs and terminates activities by responding to computer directives and questions.

Mounts and dismounts media for backups and programming and determines correct media by referencing appropriate logs. Mounts media on correct equipment and observes for media failures. Determines which media to initialize or format, selects and runs appropriate program; and takes corrective action when needed.

Monitors authorized console for system messages or questions and responds appropriately, i.e., mounts media, loads printing forms, keys commands, retrieves data, etc. Monitors for system malfunctions by observing all equipment, noting error conditions and/or lack of normal activity, determining cause and takes corrective action. Ensures proper operation of routine functions. Monitors networking and responds to faults, errors, or unusual activity. Performs on-line testing of networking by utilizing established test procedures and instructing user to test terminal and/or modem.

Establishes, writes, and maintains documentation in order to provide a high level control and eliminate the possibility of duplication. Documents include production flow charts, warnier diagrams, production diagrams, record layouts, forms, screen formats, user manuals, and policies and procedures.

Provides technical library control and maintenance for documentation, system software, vendor and hardware manuals, and programming languages, and organizes materials into technical libraries and catalogs, indexes and updates as necessary.

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SERIES CONCEPT (cont.)

Assists users with various problems, e.g., system, network, applications, by determining nature of problem and either referring user to appropriate person or taking appropriate action. Contacts appropriate repair service or phone company if problem(s) cannot be cleared. Takes appropriate steps to escalate problem resolution by following required procedures.

Processes production runs/work by running selected programs, backups, loading correct media, entering proper commands to print and monitoring output for alignment and legibility; and scheduling work in order to meet deadlines. Delivers outputs/reports to users as required. Performs system recovery in the event systems fail or programs/data are corrupted.

Performs periodic system maintenance to ensure maximum system efficiency and a minimum of system down time. The maintenance includes on-line system and peripheral tests, changing printer ribbons, vacuuming the equipment, monitoring the environmental system, and cleaning the media. The maintenance assignments are accomplished within established maintenance schedules and procedures.

Maintains and may establish a variety of system documentation such as hardware and program documentation and specifications; maintenance, problem, and production job run logs; and production run printouts. The documentation is maintained to ensure that adequate systems and tracking information is available. The maintaining of documentation and program libraries requires the use of terminals and data processing languages. PC Software support may be necessary to assist network users and update system documentation that is accessed by on-line users.

Maintains various system supplies such as tape and/or discs, printer ribbons/toner, paper and forms to ensure the system can process information and output. The supplies are maintained through an inventory system utilizing established purchasing procedures.

Performs required security procedures to include admittance to the system location, the tapes and/or discs, and the system files to prevent unauthorized access to information. Security is maintained within agency policies and procedures.

May assist computer systems programmers in system installation assignments such as pulling cables; splicing wires; connecting communication lines; and installing data processing equipment.

Maintains daily, weekly and monthly schedules for ongoing and one-time jobs to be run to ensure all user deadlines are met by working with both the programmer/analyst and the users in determining when the specific jobs will be run, the frequency in which they are run, and if the job must be run in a specific sequence with any other job.

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SERIES CONCEPT (cont.)

Performs the production set-up for daily computer runs to ensure that regularly scheduled jobs and special requested jobs are run in accordance with production requests. Production set-up requires preparation of the job control language for submission into the computer system, and assurance of the availability of required files, resources and output requirements.

Provides quality control of jobs to ensure jobs were run correctly by reviewing the executed jobs, checking for successful completion (including balancing), making sure that valid data was used and produced, and that all reports were properly produced. If there is a problem with the job, the Technician must work with the programmer/analyst and the user in reconciling it.

Reviews new and modified jobs and their documentation for acceptance into production by verifying that the job control language meets standards, establishing tape cycles and retention, establishing run schedules, developing restart procedures and run instructions, and documenting special forms, forms alignment, job/program messages, quality control and post processing procedures.

Interfaces with agency programmers/analysts, agency users and management in scheduling resource availability, distribution of reports, testing and reconciling data or program fallacies, complying with agency and users' standards, scheduling jobs, and maintaining currency of files, tables and data.

Establish, maintain and control systems and program documentation and provide programming, testing and production support.

Review design changes and provide the project control support of maintaining records, documentation of all enhancements/corrections and file changes.

Provides programming support to programmer/analyst by assisting in the development or modification of a program by adding, changing or deleting source code statements such as terminal and data processing languages.

Provides technical library control and maintenance for documentation, system software, vendor and hardware manuals, and programming languages.

Provides production support including maintaining of documentation of enhancements or corrections and acts as liaison with the system's users, and the necessary staff.

Provide administrative duties for agency programmers/analysts of department as in inventory control, printing of program catalogs, spreadsheets, help desk reports, maintain inventory of technical manuals of hardware and software. Create and maintain all documentation for the systems and production manuals.

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SERIES CONCEPT (cont.)

ALLOCATION GUIDELINES:

Because the data processing systems and equipment configuration used by each department is different, it is not possible to develop a description that will accurately describe every computer system. However, the following summary may be used as a benchmark against which each department's systems can be measured. These sizes are not to be interpreted literally, but used as a general guide in determining the size of the environment, which can impact the level of responsibility and difficulty of the job. Size is only one indicator in assessing complexity. As a general rule, though, the larger the system, the greater the variety of software and hardware, and the greater the complexity.

SMALL:

1. Remote job entry. Small mainframe or mini-computer with limited functions (PC's, local area network, local print, tape, and disk storage).
2. In-house, supporting local users - no remote sites.
3. Limited batch/on-line processing.

MEDIUM:

1. Small computers operating independently. Single central processing unit and single operating systems. Distributed processor attached to a large mainframe.
2. More than 100 terminals, printers, PC's, etc.
3. Small batch and/or on-line systems.

LARGE:

1. Large mainframe(s) with multiple central processing units and complex operating systems. Multi-tasking operating system with multiple on-line monitors.
2. 300+ terminals, printers, PC's, etc. Large network including the use of distributed processors.
3. Multiple large on-line/batch integrated systems.

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CLASS CONCEPTS

COMPUTER SYSTEMS TECHNICIAN IV

Positions allocated to Computer Systems Technician IV perform the duties described in the series concept and in addition, perform at a specialist level operating the main computer console on more complex multi-processing variable task information processing systems; coordinating complex, multi-terminal teleprocessing systems; and performing complex technical duties. Also may serve as a special projects leader or function as a senior Computer Systems Technician which commonly entails leading technical staff and serving as technical backup to the supervisor.

COMPUTER SYSTEMS TECHNICIAN III

- A. In a medium environment, performs the full range of duties independently as the sole technician on a shift or serves as the designated lead worker/team leader to one to three Computer Systems Technicians. This is the advanced journey level in a medium environment.
- B. In a large environment under general supervision, performs the full range of duties, or specializes in documentation librarian support duties. This is the journey level in a large environment.

COMPUTER SYSTEMS TECHNICIAN II

Performs the full range of duties as outlined in the series concept. This is the journey level in a small and medium environment. This is the continuing training level for Computer Systems Technician III's in a large data processing environment or for positions that provide documentation librarian support duties.

COMPUTER SYSTEMS TECHNICIAN I

Positions allocated to this level work under close supervision and receive training to perform part or all of the duties described in the series concept.

This is a continuing training level, and provides for semi-automatic progression to the Computer Systems Technician II upon satisfactory completion of the probationary period, meeting the minimum qualifications and the recommendation of the appointing authority.

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CLASS CONCEPTS (cont.)

COMPUTER SYSTEMS TECHNICIAN TRAINEE

Positions allocated to this level work under immediate supervision and receive training to perform part or all of the duties described in the series concept.

This is the entry level class in this series and provides for semi-automatic progression to the Computer Systems Technician I class upon meeting the minimum qualifications, satisfactory work performance and with the recommendation of the hiring authority.

MINIMUM QUALIFICATIONS

COMPUTER SYSTEMS TECHNICIAN IV

EDUCATION AND EXPERIENCE:

I

Graduation from high school or the equivalent education and four years experience in a computer/data processing operation to include operating and maintaining a host computer with peripheral equipment such as disc drives or magnetic tapes, line printers, etc. and included the use of job control language or its equivalent; and/or production set-ups, scheduling and submitting job control language, reviewing executed jobs, distributing reports, maintaining currency of files and data, and performing other computer operation tasks including running jobs as well as testing programs, backing up files, bringing up the system and minor maintenance and clean-up of hardware; OR

II

One year of experience as a Computer Systems Technician III in Nevada State service; OR

III

An equivalent combination of education and experience in which the candidate has demonstrated possession of the entry level knowledge, skills and abilities.

EQUIVALENCY STATEMENT:

Education above the high school level in the specified curricula may be substituted for the required experience on the basis of 30 semester credits being equal to six months of experience up to a maximum of one year of the required experience.

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MINIMUM QUALIFICATIONS (cont.)

SPECIAL NOTE:

In order to meet the needs of each agency, the position may require specialized backgrounds or skills in order for the incumbent to perform the essential functions required of the position. Any specialized background required will be identified prior to the recruitment process within the parameters of the class specification.

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES: (These may be acquired on the job and/or needed to perform the work assigned.)

Working knowledge of data processing hardware and software specific to an agency.

Ability to work on a wide variety of complex data processing activities specific to an agency.

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES: (Applicants will be screened for possession of these through written, oral, performance or other evaluation procedures.)

Detailed knowledge of the principles and practices of a computer system and peripheral devices as needed to operate and monitor a system. Detailed knowledge of the data processing procedures as needed to fix the job control language and post-process job output. Detailed knowledge of job recovery procedures. General knowledge of at least one programming language, such as Pascal, Cobol, Natural, Fortran or Basic. General knowledge of database principles. General knowledge of personal computers. General knowledge of data processing systems.

Ability to read and apply technical manuals utilized in a specific agency. Ability to provide quality control of jobs in order to ensure jobs are run correctly. Ability to provide testing support by assisting in the monitoring of program tests and reviewing computer output and identifying errors. Ability to provide documentation of systems, jobs, programs and audit documentation for completeness and accuracy.

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MINIMUM QUALIFICATIONS (cont.)

COMPUTER SYSTEMS TECHNICIAN III

EDUCATION AND EXPERIENCE:

I

Graduation from high school or the equivalent education and three years experience in a computer/data processing operation to include operating and maintaining a host computer with peripheral equipment such as disc drives or magnetic tapes, line printers, etc. and included the use of job control language or its equivalent; and/or production set-ups, scheduling and submitting job control language, reviewing executed jobs, distributing reports, maintaining currency of files and data, and performing other computer operation tasks including running jobs, testing program changes, backing up files, bringing up the system and minor maintenance and clean-up of hardware; or working with various software applications (word processing, spreadsheets, database, etc.); writing, preparing and formatting documentation (user manuals, procedures, etc.); researching and collecting data); OR

II

One year of experience as a Computer Systems Technician II in Nevada State service; OR

III

An equivalent combination of education and experience in which the candidate has demonstrated possession of the entry level knowledge, skills and abilities.

EQUIVALENCY STATEMENT:

Education above the high school level in the specified curricula may be substituted for the required experience on the basis of 30 semester credits being equal to six months of experience up to a maximum of one year of the required experience.

SPECIAL NOTE:

In order to meet the needs of each agency, the position may require specialized backgrounds or skills in order for the incumbent to perform the essential functions required of the position. Any specialized background required will be identified prior to the recruitment process within the parameters of the class specification.

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MINIMUM QUALIFICATIONS (cont.)

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES: (These may be acquired on the job and/or needed to perform the work assigned.)

Detailed knowledge of the principles and practices of a computer system and peripheral devices as needed to operate and monitor a system. Detailed knowledge of the data processing procedures as needed to fix the job control language and post-process job output. Detailed knowledge of job recovery procedures.

Ability to read and apply technical manuals utilized in a specific agency. Ability to provide quality control of jobs in order to ensure jobs are run correctly. Ability to provide testing support by assisting in the monitoring of program tests and reviewing computer output and identifying errors. Ability to provide documentation of systems, jobs, programs and audit documentation for completeness and accuracy.

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES: (Applicants will be screened for possession of these through written, oral, performance or other evaluation procedures.)

Working knowledge of the specific computer commands relative to an agency's computer. Working knowledge of the data processing procedures as needed to fix the job control language and post-process job output. Working knowledge of the agency's data processing policies and procedures. Working knowledge of job control language. General knowledge of job recovery procedures.

Working knowledge of computer hardware, peripherals and current computer technology and trends, including information management.

Ability to communicate effectively both orally and in writing. Ability to maintain alpha/numeric files and records. Ability to plan, layout and record technical material in order to produce requested documents. Ability to create and maintain specific records/documentation pertinent to the agency's computer system and programs. Ability to read and apply technical manuals and interpret job schedules. Ability to analyze problems, create alternatives and recommend appropriate solutions. Ability to assist users with problems and disseminate system information. Ability to understand and interpret user job schedules (i.e., instructions on sequence and how to run schedules). Ability to work with programmer/analyst and the user in reconciling program/job quality problems. Ability to prioritize jobs/workload based on time commitments and hardware resources.

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MINIMUM QUALIFICATIONS (cont.)

COMPUTER SYSTEMS TECHNICIAN II

EDUCATION AND EXPERIENCE:

I

Graduation from high school or the equivalent education and two years experience in a computer/data processing operation to include operating and maintaining a host computer with peripheral equipment such as disc drives or magnetic tapes, line printers, etc., and included the use of job control language or its equivalent; and/or production set-ups, scheduling and submitting job control language, reviewing executed jobs, distributing reports, maintaining currency of files and data, and performing other computer operation tasks including running jobs, backing up files, bringing up the system and minor maintenance and clean-up of hardware; or working with various software applications (word processing, spreadsheets, database, etc.); writing, preparing and formatting documentation (user manuals, procedures, etc.); researching and collecting data); OR

II

One year of experience as a Computer Systems Technician I in Nevada State service; OR

III

An equivalent combination of education and experience in which the candidate has demonstrated possession of the entry level knowledge, skills and abilities.

EQUIVALENCY STATEMENT:

Education above the high school level in the specified curricula may be substituted for the required experience on the basis of 30 semester credits being equal to six months of experience up to a maximum of one year of the required experience.

SPECIAL NOTE:

In order to meet the needs of each agency, the position may require specialized backgrounds or skills in order for the incumbent to perform the essential functions required of the position. Any specialized background required will be identified prior to the recruitment process within the parameters of the class specification.

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MINIMUM QUALIFICATIONS (cont.)

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES: (These may be acquired on the job and/or needed to perform the work assigned.)

Working knowledge of the specific computer commands relative to an agency's computer. Working knowledge of the data processing procedures as needed to fix the job control language and post-process job output. Working knowledge of the agency's data processing policies and procedures. Working knowledge of job control language. General knowledge of job recovery procedures.

Ability to create and maintain specific records/documentation pertinent to the agency's computer system and programs. Ability to read and apply technical manuals and interpret user job schedules (i.e., instructions on sequence and how to run schedules).

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES: (Applicants will be screened for possession of these through written, oral, performance or other evaluation procedures.)

General knowledge of the principles and practices of a computer system and peripheral devices as needed to operate and monitor a system. General knowledge of the specific computer commands relative to an agency's computer. General knowledge of job control language. Basic knowledge of computer hardware, peripherals and current computer technology.

Ability to change ribbons, run basic diagnostics and perform required maintenance on printers. Ability to read and apply technical manuals. Ability to maintain specific records/documentation pertinent to the agency's computer system. Ability to provide quality control of jobs in order to ensure jobs are run correctly. Ability to submit jobs using computer input devices. Ability to read and interpret job schedules and instructions. Ability to monitor inventory and order supplies. Ability to coordinate/maintain run schedules as required in ensuring all user deadlines are met. Ability to prioritize the workload. Ability to perform production set-ups to ensure jobs are run in accordance with production requests. Ability to troubleshoot and analyze problems to determine if the problem can be corrected by the operator or if a programmer/analyst must be called. Ability to communicate effectively both orally and in writing. Ability to maintain alpha/numeric files and records. Ability to plan, layout and record technical material in order to produce requested documents.

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MINIMUM QUALIFICATIONS (cont.)

COMPUTER SYSTEMS TECHNICIAN I

EDUCATION AND EXPERIENCE:

I

Graduation from high or the equivalent and one year of experience in a computer/data processing operation to include operating and maintaining a host computer with peripheral equipment such as disk drives or magnetic tapes, line printers, etc., and included the use of job control language or its equivalent; and/or production set-ups, scheduling and submitting job control language, reviewing executed jobs, distributing reports, maintaining currency of files and data, and performing other computer operation tasks including running jobs, backing up files, bringing up the system and minor maintenance and clean-up of hardware; or working with various software applications (word processing, spreadsheets, database, etc.); writing, preparing and formatting documentation (user manuals, procedures, etc.); researching and collecting data); OR

II

One year of experience as a Computer Systems Technician Trainee in Nevada State service; OR

III

An equivalent combination of education and experience in which the candidate has demonstrated possession of the entry level knowledge, skills and abilities.

EQUIVALENCY STATEMENT:

Education above the high school level in the specified curricula may be substituted for the required experience on the basis of 30 semester credits being equal to six months of experience up to a maximum of one year of the required experience.

SPECIAL NOTE:

In order to meet the needs of each agency, the position may require specialized backgrounds or skills in order for the incumbent to perform the essential functions required of the position. Any specialized background required will be identified prior to the recruitment process within the parameters of the class specification.

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MINIMUM QUALIFICATIONS (cont.)

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES: (These may be acquired on the job and/or are needed to perform the work assigned.)

General knowledge of the principles and practices of a computer system and peripheral devices as needed to operate and monitor a system. General knowledge of the specific computer commands relative to an agency's computer. General knowledge of job control language.

Ability to change ribbons, run basic diagnostics and perform required maintenance on printers. Ability to read and apply technical manuals. Ability to maintain specific records/documentation pertinent to the agency's computer system. Ability to provide quality control of jobs in order to ensure jobs are run correctly. Ability to submit jobs using computer input devices. Ability to read and interpret job schedules and instructions. Ability to monitor inventory and order supplies. Ability to coordinate/maintain/run schedules as required in ensuring all user deadlines are met. Ability to prioritize the workload. Ability to perform production set-ups to ensure jobs are run in accordance with production requests.

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES: (Applicants will be screened for possession of these through written, oral, performance or other evaluation procedures.)

General knowledge of the principles and practices of a computer system and peripheral devices as needed to operate and monitor a system. General knowledge of the specific computer commands relative to an agency's computer. General knowledge of job control language. Basic knowledge of computer hardware and peripherals.

Ability to change ribbons, run basic diagnostics and perform required maintenance on printers. Ability to read and apply technical manuals. Ability to maintain specific records/documentation pertinent to the agency's computer system. Ability to provide quality control of jobs in order to ensure jobs are run correctly. Ability to maintain alpha/numeric files and records. Ability to plan, layout and record technical material in order to produce requested documents.

COMPUTER SYSTEMS TECHNICIAN TRAINEE

EDUCATION AND EXPERIENCE:

Graduation from high school or equivalent education.

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MINIMUM QUALIFICATIONS (cont.)

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES: (These may be acquired on the job and/or needed to perform the work assigned.)

General knowledge of the principles and practices of a computer system and peripheral devices as needed to operate and monitor a system. General knowledge of the specific computer commands relative to an agency's computer. General knowledge of job control knowledge.

Ability to change ribbons, run basic diagnostics and perform required maintenance on printers. Ability to read and apply technical manuals. Ability to maintain specific records/documentation pertinent to the agency's computer system. Ability to provide quality control of jobs in order to ensure jobs are run correctly. Ability to submit jobs using computer input devices. Ability to read and interpret job schedules and instructions. Ability to monitor inventory and order supplies. Ability to coordinate/maintain run schedules as required in ensuring all user deadlines are met. Ability to prioritize the workload. Ability to perform production set-ups to ensure jobs are run in accordance with production requests. Ability to troubleshoot and analyze problems to determine if the problem can be corrected by the operator or if a programmer/analyst must be called.

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES: (Applicants will be screened for possession of these through written, oral, performance or other evaluation procedures.)

Knowledge of basic arithmetical computations, e.g., addition, subtraction, division, multiplication.

Ability to understand and follow oral and written instructions. Ability to communicate effectively orally and in writing.

This class specification is used for classification, recruitment and examination purposes. It is not to be considered a substitute for work performance standards for positions assigned to this class.

	<u>7.935</u>	<u>7.940</u>	<u>7.941</u>	<u>7.957</u>	<u>7.943</u>
ESTABLISHED:	8/10/89R 2/15/91PC	8/10/89R 2/15/91PC	8/10/89R 2/15/91PC	7/1/95P 9/16/94PC	8/10/89R 2/15/91PC
REVISED:	7/1/95P	7/1/95P	7/1/95P		7 / 1 / 9 5 P
REVISED:	9/16/94PC	9/16/94PC	9/16/94PC		9/16/94PC
REVISED:		12/4/95UC	12/4/95UC	12/4/95UC	
REVISED:	7/1/97LG	7/1/97LG	7/1/97LG	7/1/97LG	7/1/97LG

SUPPLEMENTAL CLASSIFICATION GUIDELINES

COMPUTER SYSTEMS TECHNICIAN SERIES

The Computer Systems Technician allocation guidelines supplement and clarify the class concepts for this class series. These guides have been established in an attempt to provide consistency in the allocation of positions to classes in this series. In allocating positions to classes in the Computer Systems Technician series one must keep in mind that each agency may assign a different combination of duties and responsibilities to its Computer Systems Technicians. Therefore, the allocation of positions to classes should always be done by considering all the classification factors together. Pages 8 and 9 contain definitions of terms used in these guidelines commonly used in the data processing field. Also, a supplement to the allocation guidelines is attached which provides general information regarding data processing concepts/principles.

In the past there were two series, Computer Operator and Data Processing Technician. The Computer Systems Technician series is a combination of these two class series. The Technician IV is a specialist who is responsible for the more complex support work, and will typically be located in data processing organizations with large complex systems and on-line telecommunication systems. Medium sized environments may be able to support such a specialist position on the basis of being assigned a variety of complex critical support duties. Supervisory responsibility has been removed from this series and the Computer Systems Supervisor series expanded. The class concepts have been amplified so that environment is considered along with other key classification factors.

It should be remembered that the individual classification factors are not mutually exclusive. The degree or extent of one factor almost always has a bearing on the others. For example, increased responsibilities frequently entail increased difficulties. Consequently, a lessening of difficulty means a lessening of responsibilities. The classification factors defined in this guideline are environment, complexity of work, supervision received/independence of action and scope of responsibility/consequence of error.

ENVIRONMENT

Environment refers to the size of the computer system, including the (1) hardware/operating system, (2) network, and (3) application systems. Because the application systems and equipment configuration used by each department is different, it is not possible to develop a description that will accurately describe every computer system. However, the following summary describes various factors which may be used as a benchmark against which each department's systems can be measured. These sizes are not to be interpreted literally, but used as a general guide in determining the size of the environment, which can impact the level of responsibility and difficulty of the job. Size is only one factor which is considered in assessing complexity. As a general rule, though, the larger the system, the greater the variety of software and hardware, and the greater the complexity.

Small:

1. Remote job entry. Small mainframe or mini-computer with limited functions (PC's, local area network, local print, tape, and disk storage).
2. In-house, supporting local users - no remote sites.
3. Limited batch/on-line processing.

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Medium:

1. Small computers operating independently. Single central processing unit and single operating systems. Distributed processor attached to a large mainframe.
2. More than 100 terminals, printers, PC's, etc. Has remote sites.
3. Small batch and/or on-line systems.

Large:

1. Large mainframe(s) with multiple central processing units and complex operating systems. Multi-tasking operating system with multiple on-line monitors.
2. 300 + terminals, printers, PC's, etc. Large network including the use of distributed processors.
3. Multiple large on-line/batch integrated systems.

COMPLEXITY OF WORK

Job complexity is a function of both the depth and breadth of knowledge required to perform required duties. Complexity can increase as either the size of the system increases or as the number of applicable factors increases. For example, a position that has responsibility for a single factor at a large facility may have duties that are complex because of a large number of devices (i.e., direct storage devices) that must be monitored. A position at a medium facility may have equally complex duties because of multiple factors (i.e., direct storage devices, terminals and remote drops) that must be monitored. Generally, a position at a small facility will not be as complex, so therefore, will not warrant classification beyond the journey level.

Since Computer Systems Technician I is a trainee class and positions are never allocated at a trainee level, it will not be included in the allocation guidelines.

Computer Systems Technician II:

In a small environment, performs duties as described in the series concept.

In a medium environment, performs all or most duties as listed below. Prime responsibility for operation, monitoring, and analysis of system equipment malfunctions is the responsibility of higher levels, along with the development of system documentation, creating, updating and changing a job control language and performing code migration.

On the large, most complex systems, in a continuing training capacity, performs all or most duties listed below.

Duties typically performed by Computer Systems Technician II, in a medium to large environment.
(Incumbents may perform all or a portion of the duties listed.):

- 1) Bursting, decollating and distributing output.
- 2) Printing, installing paper on printer and changing paper.
- 3) Maintaining the stockroom.
- 4) Mounting, dismounting and maintaining medium.
- 5) Monitoring routine consoles system network and activity.
- 6) Performing building security and environmental control.
- 7) Serving as initial response to user requests (first-line problem solving).
- 8) Maintaining operator logs.
- 9) Maintaining and cleaning equipment.
- 10) Preparing and submitting jobs based on predetermined schedules and performing quality control review of submitted jobs.
- 11) Updating and changing a job control language (JCL).
- 12) Under close supervision, performing code migration.
- 13) Making recommendations for procedure changes.
- 14) Assisting in equipment installation and relocation.
- 15) As directed, making appropriate changes to documentation.
- 16) Performing various media duties, such as labeling and cataloging tapes, maintaining a media index, and putting tapes back on the racks.
- 17) As directed, powering up the system, keying directives and terminating activities.

Computer Systems Technician III:

Computer Systems Technician III's, perform either all, or a portion of the above listed duties. In addition, they perform some or all of the following duties. Key duties are in bold letters and at least five or more of these duties must be performed at least 35% or more of the time. Typically, in a medium environment a Computer Systems Technician III is justified if either independently performing these key duties alone on a shift or performing these key duties and serving as a lead worker/team leader to one to three Computer Systems Technician II's.

On the large, complex systems, performs all or most duties listed. This is the journey level for positions in the large, complex environments.

Primary technical duties involve operating/monitoring the system/communication consoles and analysis of computer system equipment malfunctions; and/or developing system documentation, creating, updating and changing a job control language, and performing code migration.

- 1) Maintaining inventory records and ordering supplies.
- 2) **Monitoring consoles, performing diagnostic procedures and taking corrective action as required.**
- 3) Notifying and scheduling vendors for repair and maintenance, as approved.
- 4) **Monitoring environmental controls, performing diagnostic procedures, and taking corrective action, as required.**
- 5) **Responding to problems (e.g., user, application, department), analyzing problem and solving, if possible. If not, documenting and referring problem, as appropriate.**
- 6) **Developing system documentation.**
- 7) Scheduling equipment maintenance.
- 8) **Working with appropriate personnel to set up job schedules.**
- 9) **Creating, updating and changing a job control language.**
- 10) **Performing code migration.**
- 11) **Developing and implementing procedural changes.**
- 12) **Performing various media management duties, such as organizing the media library and determining placement of media on racks.**

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- 13) **Responsible for powering up the system, keying directions to initiate system programs and terminating activities.**
- 14) Preparing and submitting jobs based on predetermined schedules. Rerunning jobs and restoring files as required.
- 15) **Uploading and downloading of files (file transfer).**

Computer Systems Technician IV:

Computer Systems Technician IV, is differentiated from the other classes in this series by the duties being at a level of difficulty that requires working knowledge of the system and network and the ability to demonstrate technical expertise in all phases of the operating system. Incumbents work independently, serves as special project leaders, and functions as the senior Computer Systems Technician which commonly entails leading technical staff and serving as technical backup to the supervisor. Positions at this level are assigned a variety of difficult technical responsibilities in the large, complex operating environments. Medium environments may be able to support such a specialist position on the basis of being assigned a variety of complex critical support duties. The IV level serves as a bridge class to the professional data processing classes.

Positions allocated to the Computer Systems Technician IV class will have high level technical responsibilities which include duties similar to the following:

- 1) Recommending and implementing system facility security.
- 2) Installing, maintaining, documenting and testing software.
- 3) Identifying and resolving problems associated with the system and network.
- 4) Developing system procedures and evaluating new equipment.
- 5) Recommending hardware and software configurations and options.
- 6) Making evaluations towards application packages.

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IN ORDER TO JUSTIFY THE IV LEVEL, WORK MUST REQUIRE GENERAL KNOWLEDGE OF AT LEAST ONE PROGRAMMING LANGUAGE, GENERAL KNOWLEDGE OF DATA BASE PRINCIPLES AND GENERAL KNOWLEDGE OF PERSONAL COMPUTERS (PC's).

SUPERVISION RECEIVED/INDEPENDENCE OF ACTION

Computer Systems Technician II:

In a small and medium environment, works under general supervision where non-routine tasks are reviewed by the supervisor. Typically significant problems are either passed to or initially identified by a higher level. Supervisor or higher level Computer Systems Technician is available to assist with unique situations involving the interpretation of unusual application of procedures, rules, and regulations. Keeps supervisor informed of critical events.

In a large environment, works under close supervision in a continuing training capacity.

Computer Systems Technician III:

In a medium environment, works relatively independently under general supervision and receives technical assistance from higher levels only when unique situations are encountered. Work assignments are generally self-sustaining and only the most difficult problems are brought to the attention of a higher level for consultation and review.

In a large environment, works under general supervision and performs all job duties with relative independence.

Computer Systems Technician IV:

In a medium or large complex environment, works independently with only general direction from a management/supervisory level. Is expected to handle the most difficult problems and develop and maintain system procedures with minimum guidance.

SCOPE OF RESPONSIBILITY/CONSEQUENCE OF ERROR

Computer Systems Technician II:

The effect of actions and decisions is usually limited to the work unit or within the agency. Errors could result in delays; incorrect data or forms; loss of data; job aborts and costly reruns; backlogs; equipment damage; user dissatisfaction; and unnecessary expense if incorrect vendor called. Errors would usually be identified and corrected before jobs released.

Computer Systems Technicians III and IV:

These classes perform duties that affect persons or organizations beyond the work unit or agency. For the Computer Systems Technician III, in addition to impact of errors listed for Computer Systems Technician II, errors may get to end users and could affect the entire system.

For the Computer Systems Technician IV, problem resolution may be delayed causing major impact on users; damage or loss of critical data; extensive reruns; teleprocessing network may be disrupted; incorrect teleprocessing planning and/or installations; errors could impact entire department or shift; significant loss of processing time and/or damage to equipment; improper training of staff.

DEFINITIONS OF DATA PROCESSING TERMS

APPLICATION SYSTEM: Programs and/or processes developed to meet a particular need or to solve a problem.

COMMUNICATIONS NETWORK: A network in which input/output devices are connected by communication links to one or more central computers. Data and commands are transmitted via use of telephone lines, microwave lines, satellite, etc.

COMPUTER SYSTEM: Includes hardware and software.

CONSOLE: The part of a computer system that enables human operators to communicate with the system.

DATA MANAGEMENT: (1) The function of controlling the acquisition, analysis, storage, retrieval, and distribution of data. (2) In an operating system, the computer programs that provide access to data, perform or monitor storage of data, and control input/output devices.

DIRECT STORAGE DEVICE: A basic type of storage medium that allows information to be accessed by positioning the medium or accessing mechanism directly to the information required, thus permitting direct addressing of data locations.

INTERACTIVE SYSTEM: Pertains to applications in which each entry calls forth a response from a system or program, as in an inquiry system or an airline reservation system. An interactive system may also be conversational, implying a continuous dialog between the user and the system.

HARDWARE: Physical equipment used in data processing, as opposed to programs, procedures, rules, documentation, etc.

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JOB CONTROL LANGUAGE: A problem-oriented language described to express statements in a job that are used to identify the job and describe its requirements to an operating system.

JOB STREAM: The sequence of job control statements and data submitted to an operating system on an input unit especially activated for this purpose by the operator.

MEDIA: Tape cartridges, tape reels, diskettes, optical devices, etc.

MULTIPROCESSING SYSTEM: A computer system employing two or more interconnected processing units to execute programs simultaneously.

MULTI-TERMINAL TELEPROCESSING SYSTEMS: Systems comprised of multiple terminals connected to a communications network.

NETWORK: See Communications Network.

ON-LINE SYSTEM: A system in which the input data enters the computer directly from the point of origin or in which output data is transmitted directly to where it is used.

PRODUCTION SYSTEM: An ongoing application system which is a series of computer programs or processes used to provide output on a regular basis or on demand.

REAL TIME: On line computer processing system that receives and processes data quickly enough to produce output to control, direct, or affect the outcome of an ongoing activity or process.

(RJE) REMOTE JOB ENTRY: Refers to the computer programs used to submit processing jobs from remote terminals.

SOFTWARE: Programs, procedures, rules and documentation pertaining to the operation of a computer.

TELEPROCESSING NETWORK: See Communications Network.

UTILITY PROGRAMS: A computer program in general support of the processes of a computer; for instance, a diagnostic program, sort program, a program described to copy data from one storage device to another, etc.